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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/615,354 | 07/07/2003 | Roy Alan Hastings | TI-35919 | 8886 |

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| EXAMINER |
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LE, DINH THANH

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| ART UNIT | PAPER NUMBER |
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2816

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 03/29/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/615,354

Applicant(s)

HASTINGS, ROY ALAN

Examiner

DINH T. LE

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/14/07.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 24-27 is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

NON-FINAL REJECTION

Claim Rejections

Claim Rejections - 35 USC § 112

Claims 19-23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is not understood what the “region of operation” is, how this region can be “detected”, how the input currents can be “determined” and how the substantially equal perturbation currents can be “defined” as recited in claim 19, how a collector current can be “detected” in claims 20 and 22 since the present specification does not clearly show any circuits for performing the detecting, determining and defining function. Clarification is required.

Claims 1-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Correction or clarification is required.

In claim 1, the description of the present invention is incomplete because the circuit and the input transistors are not connected to anything. Thus, the claimed translinear circuit may not perform the recited function. It is unclear how translinear circuit can be “configured to add” the perturbation currents and the input currents since no means for performing the adding function is recited in this claim, when the translinear circuit “operate within said at least one segment, and how adding the perturbation currents can be “responsible” for creating the removable singularity since these limitations are not clearly recited. The same is true for claim 11.

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In claim 19, it is unclear what the “region or operation” on line 4 and “transfer function” on line 5 are, how the region can be “detected”, how the input currents can be “determined” and the perturbation currents can be “defined”, and how the recitation “steps of detecting, determining and defining” is read on the preferred embodiment. Insofar as understood, no circuits or means for performing such steps are seen on the drawings.

The remaining claims are dependent from the above rejected claims and therefore also considered indefinite.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7, 9-15 and 18- 23 remain rejected under 35 USC 102 (b) as being anticipated by

Figures 2-3 of the applicant’s admitted prior art.

As the best construed, the admitted prior art discloses in Figures 2-3 a circuit comprising:

- an input transistors (Q3, Q5) for receiving input currents (IA, IC);
- a current mirror (M1-M3, Figure 3);
- a current source (IX, Figure 3);
- Trafton-Hastings clamp transistor (Q11);
- a control transistor (Q6);
- a circuit for providing perturbation currents (M3) in Figure 3.

Allowable Subject Matter

Claims 24-27 are allowed because the prior art of record fails to suggest “a Trafton-Hastings clamp transistor having a collector current coupled to control said outputs of said current mirror, said Trafton-Hastings clamp transistor being coupled to said translinear loops and operating to produce said collector current when said input currents cause said translinear circuit to operate in a segment of a piecewise-polynomial- continuous characteristic function having a removable singularity” as recited in claim 24 and “a Trafton-Hastings clamp bipolar transistor, having a base coupled to said collector of said third bipolar transistor, an emitter coupled to said collector of said first bipolar transistor, and a collector coupled to an input of said current mirror” as combined in claim 26.

Claims 8 and 16 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. This claim is allowed because the prior art of record fails to suggests “wherein said providing said perturbation currents further comprises providing a current mirror controlled by said Trafton-Hastings clamp transistor to supply said perturbation currents to said input transistors”.

Response to Applicant's Arguments

The applicant argues that Figure 6 and page 11 of the present invention disclose the detecting, defining and determining steps”. The argument is not persuasive because the circuit of Figure 6 of the present invention does not have any means for providing these steps. Although claim 19 is the method for claiming the operation of Figure 6; however, the claimed steps should

be based on the performance of elements formed with the circuit of Figure 6, not based on the claimed formula.

The applicant argues that the circuit (16,18,20) in Fig.2 of the admitted prior art are the translinear circuit limbs and thus do not add perturbation currents because they accept the input currents, and the circuit (24,26) of Fig.3 are likewise limbs and do not provide added perturbation currents. Consequently, neither Fig.2 nor Fig.3 suggests any of the claims. The arguments are not persuasive because they are based on the unclear limitations as stated above.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DINH T. LE whose telephone number is (571) 272-1745. The examiner can normally be reached on Monday-Friday (8AM-7PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TIMOTHY CALLAHAN can be reached at (571) 272-1740.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

3/19/07


DINH T. LE
PRIMARY EXAMINER